

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the amendments above and the following remarks. Claims 1, 23, and 26 have been amended herein. Claims 1-3, 5-17, 20, and 22-26 are pending of which claims 1, 23, and 26 are independent.

Claims 1-3 and 5-17 were rejected under 35 U.S.C. §101 as allegedly not falling within one of the four statutory categories of invention.

Claims 1-3, 6 and 23-26 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated over Lee et al. (5,583,659) (“Lee”).

Claim 5 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lee in view of Kodaira et al. (6,868,183) (“Kodaira”).

Claims 8, 10, and 15-17 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lee in view of Hashimoto et al (6,987,045) (Hashimoto).

These rejections are respectfully traversed for the reasons stated below.

Allowable Subject Matter

It is noted with appreciation that claims 7, 9, 11-14, 20, and 22 were objected to as being dependent up on a rejected base claim, but allowable if rewritten in independent form.

New Grounds of Rejection Under 35 U.S.C. § 101

Claims 1-3 and 5-17 were rejected under 35 U.S.C. §101 as allegedly not falling within one of the four statutory categories of invention. Claim 1 has been amended to recite, “performing, by a computer, edge-bounded averaging to determine line segments” and

therefore ties the claims to a computer as suggested by the Examiner, and is thus statutory. Accordingly, the Examiner is respectfully requested to withdrawn the rejection of claims 1-3 and 5-17.

Claim Rejection Under 35 U.S.C. §102

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1-3, 6, and 23-26 were rejected under 35 USC § 102(b) as being anticipated by Lee. The rejection should be reversed because Lee clearly fails to teach all the claimed features.

The Response to Arguments section on pages 9-12 of the Examiner's Answer more clearly identifies some of the features of Lee the Examiner is relying upon to teach the

claimed features. The arguments below are mostly in response to Examiner's remarks on pages 9-12 of the Examiner's Answer.

Claim 1 recites,

performing, by a computer, edge-bounded averaging to determine line segments, wherein the edge-bounded averaging includes finding one of either

based on the determining of whether pixels having connectivity with the pixel (i,j) are edge pixels or non-edge pixels, determining an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel or

based on the determining of whether pixels having connectivity with the pixel (i,j) are edge pixels or non-edge pixels, determining an average value of only the non-edge pixels having connectivity with pixel (i,j) in response to determining that pixel (i,j) is a non-edge pixel.

The rejection asserts Lee discloses performing edge-bound averaging to determine an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel. In particular, the Examiner, on page 10 of the Examiner's Answer, asserts that column 8, lines 34-43 of Lee discloses determining the average value. In bold, the Examiner cites lines 39-41 of column 8 as allegedly teaching a calculation of average value for only edge pixels having connectivity.

Lines 39-41 disclose calculating an average pixel intensity value, L_{avg} . However, the Examiner appears to ignore that lines 40-41 specifically disclose calculating the average pixel intensity value, **L_{avg} occurring within an N-by-N pixel window** centered about pixel (i,j). Thus, the average pixel intensity value, L_{avg} , is calculated from a window of pixels and is the average for all the pixels in the window. Column 4, lines 29-30 specifically disclose average intensity values for the entire N-by-N pixel window. Thus, the average pixel intensity value,

L_{avg} , is the average intensity value for each pixel in the window. Furthermore, and most importantly, Lee does not disclose the N-by-N window only includes edge pixels, and thus, Lee fails to teach calculating the average value base on the determining of whether the pixels are edge or non-edge pixels.

In addition, calculating L_{avg} is further described in column 10, lines 37-50 of Lee. L_{avg} , is determined from the L_{min} and L_{max} of all the N-by-N pixels in the window. L_{avg} is the average for each of the pixels in the N-by-N window, some of which may not be edge pixels. Examples of the N-by-N windows are shown in figures 3B and 3C of Lee, and some of the pixels in the window could easily be non-edge pixels. Thus, Lee clearly fails to calculate the average based on the determining of whether pixels having connectivity with the pixel (i,j) are edge pixels or non-edge pixels as recited in claim 1.

Furthermore, claim 1 recites, “an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel.” Lee fails to teach determining an average value only for edge pixels having a connectivity with pixel (i,j). Firstly, as described above, the average value L_{avg} is determined for all pixels in a window in Lee. Some of those pixels may not be edge pixels, and thus cannot be edge pixels connected to the center edge pixel (i,j) of the window of Lee. Secondly, Lee discloses determining L_{avg} for a window whenever an area gradient $GS(i,j)$ exceeds a threshold GT. After determining $GS(i,j)$ exceeds a threshold GT, there is no additional determination made as to whether the pixel is connected to an edge pixel (i,j). Instead, the pixels may not be connected.

On page 11 of the Examiner’s Answer, the Examiner alleges,

Lee clearly teaches a determining of whether the pixels having connectivity are edge pixels or non-edge pixels (to determine of whether

pixels are **associated** with an area gradient such as edge or non-edge)(column 4, lines 22-33).

Column 4, lines 22-33 discloses determining whether a pixel is near an edge or not.

The Examiner appears to be alleging that because Lee discloses determining whether a pixel is near an edge or not, Lee discloses calculating an average value of only the edge pixels having connectivity with edge pixel (i,j). Clearly, Lee fails to teach a determination as to whether a pixel determined to be near an edge is connected to another edge pixel.

Independent claims 23 and 26 contain features similar to that of independent claim 1 and are believed to be allowable for at least the same reasons set forth above.

Accordingly, because the prior art of record fails to teach or suggest the elements of independent claims 1, 23, and 26, withdrawal of this rejection and allowance of the claims is respectfully requested.

Claim Rejections Under 35 U.S.C. §103(a)

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lee in view of Kodaira.

Lee and Kodaira, taken singly or in combination, fail to teach or suggest the elements of independent claim 1, from which claim 5 depends, for the reasons set forth above. Accordingly, claim 5 is allowable at least by virtue of its dependence on claim 1 and withdrawal of this rejection and allowance of the claims is respectfully requested.

Claims 8, 10, and 15-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lee in view of Hashimoto.

Lee and Hashimoto, taken singly or in combination, fail to teach or suggest the elements of independent claim 1, from which claims 8, 10, and 15-17 depend, for the reasons set forth above. Accordingly, claims 8, 10, and 15-17 are allowable at least by virtue of their dependence on claim 1 and withdrawal of this rejection and allowance of the claims is respectfully requested.

PATENT

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Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

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